

ABSTRACT

Disclosed are an electro-magnetic force driving actuator and a circuit breaker comprising the actuator. The actuator comprises a hollow inner case made of magnetic material; an outer case made of magnetic material and being concentric with the inner case and radially mounted at an interval outwardly from the inner case; inner and outer permanent magnets abutting on an outer surface of the inner case and an inner surface of the outer case, respectively and positioned to maintain a predetermined gap between the magnets; a coil mounted to be linearly movable in an axial direction between the inner and outer permanent magnets; and a non-magnetic movable member having an end to which the coil is provided and linearly moving in the axial direction between the inner and outer permanent magnets with electromagnetic repulsive forces occurring due to magnetic fields by the inner and outer permanent magnets and a current density of the coil when current is supplied to the coil. The circuit breaker comprises the actuator and an insulation-actuating rod connected to another end of the movable member and linearly moving by the movable member to perform closing and opening operations.